

The California Land Snails *Helminthoglypta reediana* WILLETT
and *Helminthoglypta similans* HANNA & SMITH
with Comments on their Relationships
(Gastropoda : Pulmonata)

BY

ALLYN G. SMITH

Associate Curator, Department of Invertebrate Zoology, California Academy of Sciences, San Francisco 18, California

The suggestion has been made by Pilsbry and others that *Helminthoglypta reediana* Willett, 1932, and *H. similans* Hanna & Smith, 1937, may be conspecific. There are good reasons for this supposition; first, because of the similarity in the descriptions of the shells, and second, because the range of *H. similans* may overlap the area of the type locality of *H. reediana*.

In order to provide some information on this problem the paratypes of *Helminthoglypta reediana* were borrowed for study several years ago from the Los Angeles County Museum through the courtesy of the late George Willett for the purpose of making a comparison with paratypes of *H. similans* in the collection of the California Academy of Sciences. Unfortunately, it was not possible to compare the holotypes of the two species, but some basis for such a comparison is found in the published figures. The inability to compare them directly is not a serious lack, however, as the holotype of *H. similans* is a representative specimen, the characters of which are found also in the paratypes. It is assumed that the same is true for the paratypes of *H. reediana*; at least the description agrees generally with the characters exhibited by the more adult shells in the paratype lot.

The paratypes of *Helminthoglypta reediana*, eight in number, are all good though immature specimens that show significant sculptural characters plainly. The three largest are apparently close to maturity though they lack the reflected and slightly thickened peristome of

adult shells. The nuclear whorls of *H. reediana* and of *H. similans* have about the same type of sculpture. In this respect both species are like *H. carpenteri* (Newcomb, 1861), which is found in the same general area. The early post-nuclear whorls of all three species also are not greatly different. In *H. reediana* and *H. similans* they show anastomosing lines of growth that give the surface of the shells a dull matte appearance; and both species have round or elongate papillations, not particularly closely set but arranged in a descendingly spiral direction. Better preserved shells of both species exhibit areas of microscopic, wavy-lined sculpture visible only under a magnification of about 40 X. However, in *H. reediana* the papillations are generally more pronounced than in *H. similans*, but this difference, in itself alone, is hardly enough reason to separate the two species subspecifically, and certainly not enough for specific separation.

The most striking difference between the two species occurs in the sculpture and general texture of the bodywhorl. The three largest paratypes of *Helminthoglypta reediana* show a most unusual sudden change in the sculptural characters of the bodywhorl from those that precede it. On each of these three shells, after the final resting (estivating) stage before the snail becomes adult, the newly formed whorl is smooth and shiny, especially on the base. The papillations disappear, and their place is taken by incised spiral lines. Lines of growth no longer coalesce in an irregular manner but become generally continuous over the entire whorl. On these three shells this change takes

place at $4\frac{7}{8}$, $5\frac{1}{4}$, and $5\frac{1}{2}$ whorls, respectively; the other five paratypes are apparently too immature to show this change. It is not possible to say whether this sudden sculptural change is true also on the holotype either from the description or the published figure, but it should be easy to determine from a close examination of the holotype itself.

In general shape *Helminthoglypta reediana* and *H. similans* are close, as Willett has pointed out. The incised spirals on the bodywhorl of *H. reediana* in the adult stage are not as strongly marked as in most good specimens of *H. carpenteri*, although some lots of the latter species in the collection of the California Academy of Sciences from the northern end of its range show a weakening of these lines. Spiral markings on *H. similans*, if present at all, are still less of a sculptural feature. There is, however, one sure method of determining the relationship of *H. reediana* to the other two species. If the mantle of the living animal is of a uniformly gray or brownish-gray color without other markings, its relationship is close to *H. carpenteri*; but if the mantle is densely blotched with black, it is closer to *H. similans*. Unfortunately, none of the paratypes of *H. reediana* affords a clue to this relationship. To determine the point new material must be collected alive, which need not be adult.

The differences between *Helminthoglypta reediana* and *H. similans*, as indicated by slightly larger size, a somewhat wider umbilicus, and the greater number of whorls of the former, together with the sculptural differences in the bodywhorl of the two species, seem sufficient to warrant leaving them as separate species. No advantage can be seen to accrue by merging them without more and better evidence based upon additional specimens of *H. reediana* from the type locality in Lowe Canyon, southern Monterey County, which "lies between Ranchita and Vineyard Canyon road, which runs from San Miguel to Parkfield". Until such evidence is at hand, the true relationships to other species

must remain open to a certain amount of speculation.

As *Helminthoglypta reediana* is reported to have been collected in the "vicinity of Paso Robles", which is in the northern end of San Luis Obispo County, it seems pertinent to comment on a set of dead and broken "bones", including seven fairly good immature shells collected in this area and now in the writer's collection (AGS No. 5509). This lot is a curious assemblage of papillated and striated shells, all of the best juveniles being papillate although one of these shows the peculiar break in sculpture found in *H. reediana*. Some of the adult shells are definitely not this species, however, and seem closer to *H. carpenteri*, although one or two of the better immature specimens show evidence that the snail had the black-maculated mantle of *H. similans*. In general, the shells are of the size of *H. similans* but are noticeably more globose with a small umbilicus, as in both this species and *H. carpenteri*. This lot was collected by E. E. Hand in 1931 in the "second canyon back of Thompson's Auto Camp, Paso Robles, California". Collecting in this area is difficult, as snails are hard to find, especially living adults in good condition. The probabilities are that one would most likely find them under live-oak deadfalls or similar cover in the hills to the west of the Salinas River.

Literature Cited

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